

# Implementation Plan



## Transmission and Distribution Sectors

### Company Information

Partner Address Label Here

*If the information provided above is incorrect,  
please make corrections below.*

Company Name: \_\_\_\_\_

Gas Star Contact: \_\_\_\_\_

Position: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip Code: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

### Implementation Plan Elements

#### ELEMENT 1 Best Management Practices (BMPs)

The following BMPs have been identified as significant opportunities to cost effectively reduce methane emissions from the transmission and distribution sectors. They were selected based on their applicability to the industry, economic feasibility, and cost-effectiveness. There are 5 core BMPs for the transmission and distribution sectors:

- BMP 1** Directed inspection and maintenance at gate stations and surface facilities
- BMP 2** Identify and rehabilitate leaky distribution pipe
- BMP 3** Directed inspection and maintenance at compressor stations
- BMP 4** Use of turbines at compressor stations
- BMP 5** Identify and replace high-bleed pneumatic devices

For detailed information on these BMPs, please refer to the Lessons Learned publications on the Natural Gas STAR Web site: [www.epa.gov/gasstar/lessons.htm](http://www.epa.gov/gasstar/lessons.htm).

#### ELEMENT 2 Partner Reported Opportunities (PROs)

Current partners have reported many processes and technologies that are considered "other Best Management Practices" by the program. New partners are encouraged to evaluate and report current and new practices or technologies that cost effectively reduce methane emissions. PROs are made available to all partners, and can be viewed at: [www.epa.gov/gasstar/pro/index.htm#table](http://www.epa.gov/gasstar/pro/index.htm#table).

#### ELEMENT 3 Inventory Past Reductions

Partners are encouraged to report past methane emission reductions back to 1993. Accounting for these historical reductions will create a permanent record of your company's methane emission reduction efforts. More information is available in the Spring 1999 Natural Gas STAR Partner Update, which can be viewed at:

[www.epa.gov/gasstar/newsletters.htm](http://www.epa.gov/gasstar/newsletters.htm).

*The Implementation Plan is designed to be a dynamic tool for Natural Gas STAR Partners to plan their program activities. As company priorities and plans shift over time, the Implementation Plan may be revised or updated by submitting a new form to the program.*

**ELEMENT 1**  
**Best Management Practices**

**BMP 1**  
**Directed Inspection and Maintenance at Gate Stations**  
**and Surface Facilities**

A DI&M program is a system for performing routine leak detection and repair where leak measurement data from previous inspections are used to guide subsequent inspections and direct maintenance to those leaks that are cost effective to repair.

Estimated Reduction  
Potential  
1,190 Mcf per station

Will you be implementing this BMP? ☐ Yes ☐ No

If no, why?

- ☐ Not cost effective  
☐ May consider at a later date  
☐ Other \_\_\_\_\_ please describe:

If yes, at what scale will you be implementing this BMP?

- ☐ Company Wide  
☐ Pilot Project  
☐ Other \_\_\_\_\_

Please describe:

**Activity Summary**

Number of gate stations and surface facilities? \_\_\_\_\_

Number of gate stations and surface facilities at which DI&M will take place? \_\_\_\_\_

**Inspection Schedule**

Facilities will be inspected: ☐ quarterly ☐ annually ☐ biannually ☐ other \_\_\_\_\_

Please list the number of gate stations and surface facilities that will implement BMP 1 in upcoming years.

Year \_\_\_\_\_ Number of gate stations and surface facilities \_\_\_\_\_

Year \_\_\_\_\_ Number of gate stations and surface facilities \_\_\_\_\_

Year \_\_\_\_\_ Number of gate stations and surface facilities \_\_\_\_\_

Year \_\_\_\_\_ Number of gate stations and surface facilities \_\_\_\_\_

**Additional Information on Anticipated Plans and Projects**

If additional space is needed, please continue on the back.

## BMP 2

### Identify and Rehabilitate Leaky Distribution Pipe

To reduce methane emissions, companies can use data from leak surveys and patrols, leak repair histories, corrosion monitoring records and other sources to identify and repair or replace the leakiest pipeline segments.

Estimated Reduction Potential

29 Mcf/year/mile - Average Mains  
0.3 Mcf/year/mile - Average Services

Will you be implementing this BMP? ☐ Yes ☐ No

If no, why?

- ☐ Not cost effective
- ☐ May consider at a later date
- ☐ Other \_\_\_\_\_ please describe:

If yes, at what scale will you be implementing this BMP?

- ☐ Company Wide
- ☐ Pilot Project
- ☐ Other \_\_\_\_\_

Please describe:

#### Activity Summary

Total distribution pipeline mileage? \_\_\_\_\_

Total distribution pipeline mileage selected for this BMP? \_\_\_\_\_

#### Replacement Schedule

Total distribution pipeline mileage to be rehabilitated by the end of:

Year 1: \_\_\_\_\_ Year 2: \_\_\_\_\_ Year 3: \_\_\_\_\_ Year 4: \_\_\_\_\_

#### Additional Information on Anticipated Plans and Projects

If additional space is needed, please continue on the back.

### BMP 3

## Implement Directed Inspection and Maintenance at Compressor Stations

A DI&M program is a system for performing routine leak detection and repair where leak measurement data from previous inspections are used to guide subsequent inspections and direct maintenance to those leaks that are cost effective to repair.

Estimated Reduction  
Potential  
8,540 Mcf per station

Will you be implementing this BMP?    ☐ Yes   ☐ No

If no, why?

- ☐ Not cost effective  
☐ May consider at a later date  
☐ Other \_\_\_\_\_ please describe:

If yes, at what scale will you be implementing this BMP?

- ☐ Company Wide  
☐ Pilot Project  
☐ Other \_\_\_\_\_

Please describe:

### Activity Summary

Total number of compressor stations? \_\_\_\_\_

Total number of compressor stations at which DI&M will take place? \_\_\_\_\_

### Inspection Schedule

Stations will be inspected:    ☐ quarterly    ☐ annually    ☐ biannually    ☐ other \_\_\_\_\_

Please list in detail the number of compressor stations that will implement BMP 3 in upcoming years.

Year \_\_\_\_\_      Number of compressor stations \_\_\_\_\_

Year \_\_\_\_\_      Number of compressor stations \_\_\_\_\_

Year \_\_\_\_\_      Number of compressor stations \_\_\_\_\_

Year \_\_\_\_\_      Number of compressor stations \_\_\_\_\_

### Additional Information on Anticipated Plans and Projects

If additional space is needed, please continue on the back.

## BMP 4

### Use of Turbines at Compressor Stations

Reciprocating engines used to drive compressors throughout transmission systems release significant amounts of methane in their exhaust. Replacing these engines with turbines can reduce a large portion of these methane emissions.

Estimated Reduction Potential  
0.234 Mcf/hp/hr per replacement

Will you be implementing this BMP? ☐ Yes ☐ No

If no, why?

- ☐ Not cost effective  
☐ May consider at a later date  
☐ Have already implemented  
☐ Other \_\_\_\_\_ please describe:

If yes, at what scale will you be implementing this BMP?

- ☐ Company Wide  
☐ Pilot Project  
☐ Other \_\_\_\_\_

Please describe:

#### Activity Summary

Please fill out the table below to show the total number of engines selected for BMP 3.

	Reciprocating Engines in Operation	Reciprocating Engines to be Retired	Turbines to Replace Retired Reciprocating Engines	New Turbine Installations (i.e., not Replacing Retired Engines)
Number				
Horsepower				
Fuel use (e.g., MMcf/year)				

#### Installation Schedule

Total number of turbines installed by the end of:

Year 1: \_\_\_\_\_ Year 2: \_\_\_\_\_ Year 3: \_\_\_\_\_ Year 4: \_\_\_\_\_

Total number of reciprocating engines retired by the end of:

Year 1: \_\_\_\_\_ Year 2: \_\_\_\_\_ Year 3: \_\_\_\_\_ Year 4: \_\_\_\_\_

#### Additional Information on Anticipated Plans and Projects

If additional space is needed, please continue on the back.

## BMP 5

### Identify and Replace High-Bleed Pneumatic Devices

Pneumatic devices used in the transmission sector actuate isolation valves and regulate gas flow and pressure at compressor stations, pipelines, and storage facilities. In the distribution sector they are used on meter runs at gate stations for regulating flow and pressure. Replacing high-bleed pneumatic devices with low- or no-bleed devices reduces or eliminates emissions and improves safety

Estimated Reduction  
Potential

124 Mcf/yr/device

Will you be implementing this BMP?    ☐ Yes   ☐ No

If no, why?

- ☐ Not cost effective
- ☐ May consider at a later date
- ☐ Have already implemented
- ☐ Other \_\_\_\_\_ please describe:

If yes, at what scale will you be implementing this BMP?

- ☐ Company Wide
- ☐ Pilot Project
- ☐ Other \_\_\_\_\_

Please describe:

#### Activity Summary

Number of high-bleed pneumatic devices in system? \_\_\_\_\_

Number of high-bleed pneumatic devices to be replaced? \_\_\_\_\_

#### Replacement Schedule

Number of high-bleed pneumatic devices to be replaced by the end of:

Year 1: \_\_\_\_\_ Year 2: \_\_\_\_\_ Year 3: \_\_\_\_\_ Year 4: \_\_\_\_\_

#### Additional Information on Anticipated Plans and Projects

If additional space is needed, please continue on the back.

## ELEMENT 2

### Partner Reported Opportunities

#### PROs

Your company may take advantage of additional technologies or practices to reduce methane emissions. These can be reported to Natural Gas STAR as PROs. Following is a list of some of the PROs that have been reported by other Gas STAR partners, which may be applicable to your operations (for more information on these PROs, please view: [www.epa.gov/gasstar/pro/index.htm](http://www.epa.gov/gasstar/pro/index.htm) and [www.epa.gov/gasstar/lessons.htm](http://www.epa.gov/gasstar/lessons.htm) ):

#### Transmission

- ☆ Use fixed/portable compressors for pipeline pumpdown
- ☆ Install vapor/fuel recovery systems
- ☆ Monitor/replace compressor rod packing systems
- ☆ Install electric starters on compressors
- ☆ Replace wet gas seals with dry seals

#### Distribution

- ☆ Reduce/downgrade system pressure
- ☆ Use smart regulators/clocking solenoids
- ☆ Re-inject blowdown gas
- ☆ Purge/retire low pressure gas holders

PROs You Will Be Implementing	Please Describe
PRO _____  At what scale will this PRO be implemented? <input type="checkbox"/> Company Wide <input type="checkbox"/> Pilot Project <input type="checkbox"/> Other _____	
PRO _____  At what scale will this PRO be implemented? <input type="checkbox"/> Company Wide <input type="checkbox"/> Pilot Project <input type="checkbox"/> Other _____	
PRO _____  At what scale will this PRO be implemented? <input type="checkbox"/> Company Wide <input type="checkbox"/> Pilot Project <input type="checkbox"/> Other _____	
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PRO _____  At what scale will this PRO be implemented? <input type="checkbox"/> Company Wide <input type="checkbox"/> Pilot Project <input type="checkbox"/> Other _____	

## ELEMENT 3

### Inventory Past Reductions

**An inventory of past reductions will help to create a permanent record of your past efforts.**

As a first step, many new partners find it useful to inventory and document past methane emission reduction efforts. The inventory process helps companies quantify the success of their past activities and target future emission reduction efforts. Historical emission reductions identified as part of the inventory process can be reported to the Gas STAR Program.

Will you inventory past activities to include in your annual report? ☐ Yes ☐ No

If yes, please describe your company's plans for reviewing past emission reduction activities.

*The Natural Gas STAR Program thanks you for your time.*

*Please send completed forms to:*

**Regular Mail**

**The Natural Gas STAR Program  
U.S. EPA (6202J)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460**

**Express/Overnight Mail**

**The Natural Gas STAR Program  
U.S. EPA (6202J)  
1310 L Street, NW  
Washington, DC 20005**

*Questions? Please call Kevin Tingley: (202) 343-9086 or Fax (202) 343-2208*

